CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	A-2-9 Gravity Pipeline Project Easement
Proposed Implementation Date:	Spring/Summer 2014
Proponent:	Fort Shaw Irrigation District (FSID)
Location:	Township 20N, Range 2W, Section 16
County:	Cascade County
Trust:	Common Schools

I. TYPE AND PURPOSE OF ACTION

Fort Shaw Irrigation District (FSID) is requesting to install a 24" underground, water pipeline to upgrade their open-ditch delivery system and to improve water management and reduce energy costs for producers while improving in-stream flows regarding the Sun River near the community of Fort Shaw. The proposed easement corridor accommodates FSID the ability to tie the main Fort Shaw Canal to an existing pipeline that flows irrigation water under Highway 200 for the purpose of servicing pivot irrigation to the adjacent cropland.

The cable will be buried through a temporary opening wide enough to accommodate a 24" pipeline using the methods of plowing and trenching. The requested width of the easement is 40' wide through State Trust Land for a distance of 1,792.98' totaling 1.647 acres.

Township	Range	Section	Irrigation Water Pipeline	Acres Affected	Trust	County
20N	2W	16	NE4, NW4	1.647	Common Schools	Cascade

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

Provide a brief chronology of the scoping and ongoing involvement for this project.

Fort Shaw Irrigation District-Proponent
U.S. Bureau of Reclamation-Arch. Report
Montana Department of Natural Resources and Conservation- Surface Owner
MORTAG, ALMA RUTH (Surface Lessee), Lease # 2303

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

U.S. Bureau of Reclamation. DNRC is not aware of other agencies with jurisdiction. DNRC is not aware of other permits needed to complete this project.

3. ALTERNATIVES CONSIDERED:

Alternative A (No-Action Alternative)- Do not proceed to issue the easement as proposed to Fort Shaw Irrigation District.

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Alternative B (Action Alternative)- Proceed to issue the easement as proposed to Fort Shaw Irrigation District for the purpose of upgrading their irrigation water delivery services to the producers in the Fort Shaw Irrigation District service area.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Soils present on the tracts involving the project site include: Silty(Si), Clayey (Cy), Shallow to gravel (SwGr) and Saline overflow (SOv). The project area is located on the western extreme of the Western Glaciated Plains of Central Montana. The topographic description is as follows: glacially scoured, and consists of rolling plains cut by deeply incised coulees. Shaw Butte is the prominent landform located just south of the project area. The slope of the project area is gentle to moderate.

Alternative A- No Action will result in no upgrades to the antiquated, open-ditch delivery system. Leaking, inefficient delivery will continue to result in minor erosion problems negatively impacting current soil conditions.

Alternative B- These soils and slopes are generally suitable for the installation of the underground irrigation pipeline. The reduction of leaks may alleviate salinity in the Vanda clay soils. Use of equipment will result in localized areas of soil compaction and soils will be disturbed where plowing and trenching occur. Reclamation efforts will require compacting and leveling of the plow scar resulting from the installation of the pipeline. Also, reclamation will require seeding of normally occurring and existing grass types utilizing seeding rates described in item # 7 below. Cumulative impacts to geology, soil quality, stability and moisture are not expected due to the minimal soil disturbance and due to the mitigations mentioned above.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

The Sun River flows through this area on to the confluence with the Missouri River near the city of Greatfalls, MT. Flood irrigation, sprinkler by over-ground pipe and pivot is present. Water conservation is a significant issue in regards to the flow of the Sun River.

Alternative A- No Action will result in the current delivery system on the Sun River remaining in place. The efficiency of the current open ditch is a concern as is flood irrigation efficiency. The Sun River has gone dry below FSID's head-works on occasion.

Alternative B- This pipeline will improve efficiency by eliminating a leaky system. Water savings is expected as a result of the proposed pipeline and may be as high as an additional 7 cubic feet per second (cfs) or 3,000 acre-feet. No negative impacts to water quality, quantity, or distribution are expected.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

In general, this area is considered to be of high quality air standards. Construction operations may temporarily influence air quality while activities are taking place. When the activity is complete, air quality quickly restores itself to a high standard.

Alternative A- No direct, indirect, or cumulative impacts will occur without construction activities.

Alternative B- Minimal and temporary impacts will occur; cumulative impacts to air quality are not expected.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

Generally good native range conditions exist on the School Trust tract. The relatively small easement corridor will need to be reclaimed after construction activities. A condition of this easement will require the reclamation of the existing open ditch system.

Alternative A- Open ditch systems propagate weed infestations. No action results in the need for aggressive weed control on a long-term basis. The No-action alternative will result in no change to the impacts on current conditions.

Alternative B- Vegetation will be minimally impacted as ~1,792.98' of 24" buried irrigation pipeline will be installed by equipment. The vegetation consists of native species. Noxious and annual weeds within the proposed pipeline corridor are a concern, however this concern will be mitigated by the proponent since FSID is responsible for weed control within the project area. This pipeline combined with initial, aggressive weed control by the proponent should alleviate the long term weed problems that exist with open-water ditch systems. Cumulative impacts on the vegetation cover, quantity and quality are not expected due to the reclamation and reseeding to be completed by the proponent. The grass seed mixture for reseeding will consist of 35% Western Wheatgrass, 35% Slender Wheatgrass, 15% Bluebunch Wheatgrass, 15% Green Needlegrass. If an agricultural seed drill is utilized 8#/acre is sufficient, however broadcast seeding requires the aforementioned rate be doubled.

A review of Natural Heritage data through NRIS was completed for T20N, R2W. One plant species of concern was noted. Northern Wildrye "Elymus Innovatus" is rare in Montana where it is known from a few scattered sites east of the Divide. Northern Wildrye habitat includes weltland, riparian areas specifically mesic openings and stream banks in low elevations. Global Rank: G5, Sate Rank: S2. This particular tract of grazing land does not contain many occurrences, if any of this species. Threatened or endangered species, sensitive habitat types, or other species of special concern will not be impacted by the installation of a buried irrigation water pipeline. No potential plant species of concern were noted.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

The area is not considered critical wildlife habitat. However, these tracts provide habitat for a variety of big game species (mule deer, whitetail deer, and pronghorn antelope), predators (coyote, fox, and badger), upland game birds (pheasant, sharp tail grouse, partridge), other non-game mammals, raptors and various songbirds.

Alternative A- No impacts to these attributes of this landscape are expected.

Alternative B- The proposal does not include any land use change which would yield changes to the wildlife habitat except the reduction of the surface water provided by the existing ditch. The main Fort Shaw Canal and an additional, supplemental canal still exist in close proximity on the Trust Land, and they will provide ample water for existing wildlife species and habitat. The proposed action will not impact wildlife forage, cover, or traveling corridors. Nor will this action change the juxtaposition of wildlife forage or hiding and thermal cover. Wildlife usage is expected to return to "normal" (pre-action usage) following the installation of the buried fiber optic cable. The proposed action will not have long-term effects on existing wildlife species and/or wildlife habitat.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

The area is not considered critical wildlife habitat. Ranching, farming, and residential activities are common in the area including a major highway in close proximity. Because construction will occur close to existing roads and the irrigation water pipeline will be buried, threatened or endangered species, sensitive habitat types, or other species of special concern or potential species of concern will not be impacted by proposed project.

Alternative A- Implementation of the no-action alternative will not affect unique, endangered or fragile limited resources. No direct, indirect, or cumulative impacts will occur.

Alternative B- A review of Natural Heritage data through the NRIS was conducted for T20N, R2W. There were four animal species of concern, three potential species of concern, and zero special status species noted on the NRIS survey: Birds- Golden Eagle, Reptiles- Greater Short-horned Lizard, Fish- Northern Redbelly Dace, Northern Redbelly X Finescale Dace. Potential Concern: Fish-Brook Stickleback, Brassy Minnow and Burbot. These particular tracts of grazing land do not contain many, if any of these species. Threatened or endangered species, sensitive habitat types, or other species of special concern or potential species of concern will not be impacted by the installation of a buried irrigation water pipeline.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

A cultural resource inventory for Fort Shaw Irrigation District, A-2-9 Pipeline was completed and submitted to the U.S. Bureau of Reclamation by Mykal Schmidt, M.A. during the month of November, 2013. Only a segment of the main canal associated with 24CA1303 (Ft. Shaw Irrigation District) was identified within the project's area of potential effect on state land (Section 16, T20N R2W). Site 24CA1303 is not state owned, and although it appears to have no formal determination of National Register listing eligibility, it is the opinion of the DNRC that proposed developments will have No Adverse Effect if the Ft. Shaw Irrigation System is ultimately determined to be a heritage property per the mandates of the Montana State Antiquities Act. If previously unidentified archaeological deposits are discovered during construction and reclamation activities on state land, all ground-disturbing work should be halted immediately. The department Archaeologist will be notified immediately to manage the new findings.

Alternative A- Implementation of the no-action alternative will have No Effect state to owned heritage properties, and no direct, indirect, or cumulative impacts.

Alternative B- Implementation of the preferred alternative will have either No Effect or No Adverse Effect to heritage properties. Impacts to the segment of canal associated with site 24CA1303 on state land will be direct, but minor, because the irrigation system will continue to function in it historic capacity.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect aesthetics. No direct, indirect, or cumulative impacts will occur.

Alternative B- Installation of the buried irrigation water pipeline will not affect the aesthetics of the land in any way as it will not be visible. It will lead to no erosion of the soil resources on the tracts as the line is located below the soil surface.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect the demands on environmental resources of the land. No direct, indirect, or cumulative impacts will occur.

Alternative B- The demand on environmental resources such as land, water, air, or energy will not be affected by the proposed action. The proposed action will not consume limited resources in the area. There are no other projects in the area that will affect the proposed project.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

There are no other projects or plans being considered on this tract listed on this Environmental Assessment Checklist. No other documents are known to exist.

Alternative A- Implementation of the no-action alternative will not affect current or proposed private, state or federal actions in the project area. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative will not affect other environmental plans or studies.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect Human Health and Safety. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative will not change human safety in the area.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect industrial, commercial, and agricultural activities and production. No direct, indirect, or cumulative impacts will occur.

Alternative B- The results of this project will positively impact agricultural activities or production in the area by increasing irrigation efficiency, conserve water and reduce losses so they may be utilized for reuse by the FSID.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect the quantity and distribution of employment. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative may have minimal, temporary positive impacts to the quantity and distribution of employment.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect the local and state tax base and tax revenues. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative will have no impact to the local and state tax base and tax revenues.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect the demand for Government services. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative: This small-scale project is being funded by FSID. There will be no excessive stress placed on the existing infrastructure in the area.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect locally adopted environmental plans and goals. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative: The proposed action is in compliance with State and County laws. DNRC is not aware of other management plans are for the area.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect access to and the quality of recreational and wilderness activities. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative: This proposed project area is next to an existing highway which generally has low recreational value. This tract is legally accessible and the proposed action is not expected to impact general recreational or wilderness activities on this state tract.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect density and distribution of population and housing. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative: The proposal does not include any changes to housing or developments. No direct, indirect, or cumulative effects to population or housing are anticipated.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect social structures or mores. No direct, indirect, or cumulative impacts will occur.

Alternative B- Implementation of the action alternative will not affect social structures or mores. No direct, indirect, or cumulative impacts will occur.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

The area is representative of a typical farming and ranching community. Montana Highway 200 is directly adjacent to the project area.

Alternative A- Implementation of the no-action alternative will not affect cultural uniqueness and diversity. No direct, indirect, or cumulative impacts will occur

Alternative B- The proposed action will not impact the cultural uniqueness or diversity of the area. There are no native, unique or traditional lifestyles or communities in the vicinity that would be impacted by the proposal.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

Alternative A- **No Action Alternative**- Not issuing the easement would result in no income to trust beneficiaries and would not provide the proponent the ability to upgrade FSID irrigation facilities. Current conditions would continue.

Alternative B- Action Alternative- Issuing the easement will benefit the School Trust in terms of the $50.00 fee generated from the easement application in addition to the easement on the Common Schools Trust land in Section 16, T20N, R2W affecting 1.647acres of grazing land X $850.00 per acre totaling $1,399.95 of revenue generated from the proposed easement. Cumulative impacts are not likely as the area is used for agricultural and grazing and the buried irrigation water pipeline will not affect the long-term viability of agriculture or grazing among other possible, future uses on the tracts.

Recommended conditions of the easement:

- Reclamation efforts will require compacting and leveling of the plow scar resulting from the installation of the pipeline. Also, reclamation will require seeding of normally occurring and existing grass types utilizing seeding rates described as: grass seed mixture for reseeding will consist of 35% Western Wheatgrass, 35% Slender Wheatgrass, 15% Bluebunch Wheatgrass, and 15% Green Needlegrass. If an agricultural seed drill is utilized 8#/acre is sufficient, however broadcast seeding requires the aforementioned rate be doubled.

- An additional condition of this easement will require the reclamation of the existing open ditch system once the new pipeline is in place and working in a serviceable manner.
    - This will include compacting, leveling and re-contouring of the old ditch area to resemble the surrounding terrain.
    - Also, reclamation will require seeding of normally occurring and existing grass types utilizing seeding rates described as: grass seed mixture for reseeding will consist of 35% Western Wheatgrass, 35% Slender Wheatgrass, 15% Bluebunch Wheatgrass, and 15% Green Needlegrass. If an agricultural seed drill is utilized 8#/acre is sufficient, however broadcast seeding requires the aforementioned rate be doubled.
    - Residual concrete infrastructure should be removed and hauled away.

EA Checklist Prepared By:	**Name:**	Andy Burgoyne	**Date:**	3/8/2014
	Title:	Helena Unit Manager		

V. FINDING

25. ALTERNATIVE SELECTED:

Alternative B including the recommended conditions delineated above - Proceed to issue the easement as proposed to Fort Shaw Irrigation District for the purpose of upgrading their irrigation water delivery services to the producers in the Fort Shaw Irrigation District service area.

26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Cumulative impacts are not likely as the area is used for agricultural and grazing and the buried irrigation water pipeline will not affect the long-term viability of agriculture or grazing among other possible, future uses on the tracts.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

[ ]	EIS	[ ]	More Detailed EA	[x]	No Further Analysis

EA Checklist Approved By:	**Name:**	Gavin Anderson		
	Title:	Forest & Lands Program Manager, CLO		
Signature:	Gavin Anderson		**Date**:	March 11, 2014